

Amendment and Claims Listing

Claim 1 (previously amended) 1. A dental curing light comprising:
a wand adapted to be grasped by a human hand,
a battery power source located within said wand,
electronic control circuitry located within said wand,
a light module attached to said wand,
said light module including an elongate heat sink with a proximal end and a distal end,
said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,
a mounting platform located at said elongate heat sink distal end, said mounting platform
being adapted to have a light emitting semiconductor device mounted thereon, and
a light emitting semiconductor device mounted on said mounting platform ~~by use of heat
conductive and light reflective adhesive~~; wherein said mounting platform is oriented so that
when a light emitting semiconductor device is mounted on it, light emitted by the light emitting
semiconductor device will be emitted at an angle of from about 30 degrees to about 150
degrees to said elongate heat sink longitudinal axis.

Claim 2 (original) 2. A dental curing light as recited in claim 1 wherein said light
emitting semiconductor device is selected from the group consisting of light emitting diode
chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip array,
surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

Claim 3 (original) (original) 3. A dental curing light as recited in claim 1 wherein
said light emitting semiconductor device utilizes a driving current of not more than about 350
milliamps.

Claim 4 (original) (original) 4. A dental curing light as recited in claim 1 further
comprising at least one air vent on said wand.

Claim 5 (original) (original) 5. A dental curing light as recited in claim 1 wherein
said mounting platform is oriented so that when a light emitting semiconductor device is
mounted on it, light emitted by the light emitting semiconductor device will be emitted generally
orthogonal to said elongate heat sink longitudinal axis.

Claim 6 (previously cancelled)

Claim 7 (previously amended) 7. A dental curing light comprising:

a wand adapted to be grasped by a human hand,
a battery power source located within said wand,
electronic control circuitry located within said wand,
a light module attached to said wand,

said light module including an elongate heat sink with a proximal end and a distal end,
said proximal end being proximate said wand, said elongate heat sink having a longitudinal axis,
and elongate heat sink being adapted to draw heat away from a semiconductor located at said
elongate heat sink distal end,

a mounting platform located at said elongate heat sink distal end,
a primary heat sink mounted to said mounting platform, and
a light emitting semiconductor device affixed to said primary heat sink;

wherein said mounting platform is oriented so that when a light emitting semiconductor device is
mounted on it, light emitted by the light emitting semiconductor device will be emitted at an
angle of from about 30 degrees to about 150 degrees to said elongate heat sink longitudinal
axis.

Claim 8 (original) 8. A dental curing light as recited in claim 7 wherein said light
emitting semiconductor device is selected from the group consisting of light emitting diode
chips, laser chips, light emitting diode chip array, diode laser chips, diode laser chip array,
surface emitting laser chips, edge emitting laser chips, and VCSEL chips.

Claim 9 (original) 9. A dental curing light as recited in claim 7 wherein said light
emitting semiconductor device utilizes a driving current of not more than about 350 milliamps.

Claim 10 (original) 10. A dental curing light as recited in claim 7 further comprising at least
one air vent on said wand.

Claim 11 (original) 11. A dental curing light as recited in claim 7 wherein said mounting
platform is oriented so that when a light emitting semiconductor device is mounted on it, light

emitted by the light emitting semiconductor device will be emitted generally orthogonal to said elongate heat sink longitudinal axis.

Claim 12 (previously cancelled)

Claim 13 (original) 13. A dental curing light as recited in claim 7 further comprising a well in said primary heat sink, said light emitting semiconductor device being located in said well.

Claim 14 (original) 14. A dental curing light as recited in claim 13 wherein said well includes a light reflective coating on its interior.

Claim 15 (original) 15. A dental curing light as recited in claim 13 wherein said light emitting semiconductor device is affixed to said primary heat sink by use of heat conductive and light reflective adhesive.

Claim 16 (original) 16. A dental curing light as recited in claim 13 further comprising a cover over said light emitting semiconductor device.

Claim 17 (original) 17. A dental curing light as recited in claim 16 wherein said cover is selected from the group consisting of windows and focus lenses.

Please amend claim 18 as follows:

Claim 18 (currently amended) 18. A dental curing light comprising:

~~a wand designed to be grasped by a human hand,~~
~~controls for initiating and terminating light transmission by the dental curing light,~~
~~circuitry in electrical connection with said controls,~~
~~a power source for powering the dental curing light,~~
~~a light source, the light source including:~~
~~a light emitting semiconductor device,~~
~~a primary heat sink, to which said light emitting semiconductor device is affixed~~
a light emitting semiconductor chip in heat conductance with said primary heat sink,
an elongate secondary heat sink to which said primary heat sink is affixed,
an elongate secondary heat sink longitudinal axis.

said primary heat sink being adapted to draw heat away from said light emitting semiconductor device, said elongate secondary heat sink being adapted to draw heat away from said primary heat sink and to dissipate said heat; and

wherein at least some of the light emitted by said light emitting semiconductor chip travels away from the curing light in a direction that forms an angular orientation in the range of from about 30 to 150 degrees with respect to said elongate heat sink longitudinal axis.

Claim 19 (original) 19. A dental curing light as recited in claim 18 wherein said primary heat sink has a well on it, and wherein said light emitting semiconductor is mounted in said well.

Claim 20 (original) 20. A dental curing light as recited in claim 19 wherein said well has a light-reflective surface.

Please amend claim 21 as follows:

Claim 21 (currently amended) 21. A dental curing light comprising:
a wand designed to be grasped by a human hand,
controls for initiating and terminating light transmission by the dental curing light,
circuitry in electrical connection with said controls,
a light source, the light source including:
a light emitting semiconductor device,
a primary heat sink to which said light emitting semiconductor device is affixed,
an elongate secondary heat sink having a proximal end and a distal end and a longitudinal axis therebetween,

a mounting platform located at said secondary heat sink distal end, said primary heat sink being affixed to said mounting platform,

said primary heat sink being adapted to draw heat away from said light emitting semiconductor device, said elongate secondary heat sink being adapted to draw heat away from said primary heat sink and to dissipate said heat; and

wherein at least some of the light emitted by said light emitting semiconductor device travels away from the dental curing light in a direction that forms an angle with respect to said elongate secondary heat sink longitudinal axis in the range of from about 45 to about 135 degrees.

Please amend claim 22 as follows:

Claim 22 (currently amended)

22. A dental curing light comprising:

~~a light module,~~

an elongate heat sink ~~located in said light module~~, said elongate heat sink having a proximal end, a distal end and a longitudinal axis therebetween, ~~said elongate heat sink being part of said light module,~~

~~a mounting platform located at said elongate heat sink distal end,~~

a primary heat sink mounted to said elongate heat sink, ~~mounting platform~~, ~~said primary heat sink being smaller in overall volume than said elongate heat sink,~~

~~a well located on said primary heat sink,~~

a light emitting semiconductor device mounted ~~in said well of~~ to said primary heat sink;
and

wherein at least some of the light emitted by said light emitting semiconductor device is emitted at an angular orientation with respect to said elongate heat sink longitudinal axis that is in the range of from about 30 to about 150 degrees.

Claim 23 (previously cancelled).

Claim 24 (previously presented)

24. A dental curing light comprising:

an elongate heat sink, said elongate heat sink having a proximal end, a distal end and a longitudinal axis therebetween,

a light emitting semiconductor device mounted in a fixed position with respect to said primary elongate heat sink; and

a battery power unit in electrical conduction with said light emitting semiconductor device in order to power it and cause it to emit light;

wherein said light emitting semiconductor device emits at least some light that travels at an angle in the range of 30 to 150 degrees to said elongate heat sink longitudinal axis.